



IFWO

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/811,138

DATE: 09/14/2004

TIME: 10:27:35

Input Set : A:\US Utility 050229-0421 Sequence Listing.txt
Output Set: N:\CRF4\09142004\J811138.raw

3 <110> APPLICANT: University of Kentucky Research Foundation
4 Daunert, Sylvia
5 Rowe, Laura
6 Dikici, Emre
7 Deo, Sapna Kamalakar
9 <120> TITLE OF INVENTION: AEQUORIN AND OBELIN MUTANTS WITH DIFFERING WAVELENGTHS AND
10 BIOLUMINESCENCE
12 <130> FILE REFERENCE: 050229-0421
14 <140> CURRENT APPLICATION NUMBER: 10/811,138
15 <141> CURRENT FILING DATE: 2004-03-29
17 <160> NUMBER OF SEQ ID NOS: 6
19 <170> SOFTWARE: PatentIn version 3.2
21 <210> SEQ ID NO: 1
22 <211> LENGTH: 861
23 <212> TYPE: DNA
24 <213> ORGANISM: Aequorea victoria
26 <400> SEQUENCE: 1
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29 ttcgacaaac aacaaggaaa catgacaaggc aaacaatact cagtcaagct tacatcagac 120
31 ttcgacaaacc caagatggat tggacgcac aagcatatgt tcaatttcct tgcgtcaac 180
33 cacaatggaa aaatctctt tgacgagatg gtctacaagg catctgatat tgtcatcaat 240
35 aaccttggag caacacctga gcaagccaaa cgacacaaaag atgctgtaga agccttcttc 300
37 ggaggagctg gaatgaaata tgggtggaa actgattggc ctgcataatat tgaaggatgg 360
39 aaaaaattgg ctactgtga attggagaaa tacgccccaaa acgaaccaac gctcatccgt 420
41 atatgggttg atgctttgtt tgatatcgat gacaaagatc aaaatggagc cattacactg 480
43 gatgaatggaa aagcatacac caaagctgtc ggtatcatcc aatcatcaga agattgcgag 540
45 gaaacattca gagtggtgcga tattgtgaa agtggacaac tcgatgtga tgagatgaca 600
47 agacaacatt taggattttg gtacaccatg gatcctgctt gcgaaaaagct ctacggtgaa 660
49 gctgtccctt aagaagctct acgggtgtga tgcaccctgg gaagatgttg tgatggaa 720
51 taaaacactg atgaattcaa tcaaaaatttt ccaaattttt gaacgatttc aatcggttgt 780
53 gttgattttt gtaatttagga acagattaaa tcgaatgatt agttgtttt ttaatcaaca 840
55 gaacttacaa atcgaaaaag t 861
58 <210> SEQ ID NO: 2
59 <211> LENGTH: 189
60 <212> TYPE: PRT
61 <213> ORGANISM: Aequorea victoria
63 <400> SEQUENCE: 2
65 Val Lys Leu Thr Ser Asp Phe Asp Asn Pro Arg Trp Ile Gly Arg His
66 1 5 10 15
69 Lys His Met Phe Asn Phe Leu Asp Val Asn His Asn Gly Lys Ile Ser
70 20 25 30
73 Leu Asp Glu Met Val Tyr Lys Ala Ser Asp Ile Val Ile Asn Asn Leu
74 35 40 45
[REDACTED] ENTERED [REDACTED]

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77 Gly Ala Thr Pro Glu Gln Ala Lys Arg His Lys Asp Ala Val Glu Ala
 78 50 55 60
 81 Phe Phe Gly Gly Ala Gly Met Lys Tyr Gly Val Glu Thr Asp Trp Pro
 82 65 70 75 80
 85 Ala Tyr Ile Glu Gly Trp Lys Lys Leu Ala Thr Asp Glu Leu Glu Lys
 86 85 90 95
 89 Tyr Ala Lys Asn Glu Pro Thr Leu Ile Arg Ile Trp Gly Asp Ala Leu
 90 100 105 110
 93 Phe Asp Ile Val Asp Lys Asp Gln Asn Gly Ala Ile Thr Leu Asp Glu
 94 115 120 125
 97 Trp Lys Ala Tyr Thr Lys Ala Ala Gly Ile Ile Gln Ser Ser Glu Asp
 98 130 135 140
 101 Cys Glu Glu Thr Phe Arg Val Cys Asp Ile Asp Glu Ser Gly Gln Leu
 102 145 150 155 160
 105 Asp Val Asp Glu Met Thr Arg Gln His Leu Gly Phe Trp Tyr Thr Met
 106 165 170 175
 109 Asp Pro Ala Cys Glu Lys Leu Tyr Gly Gly Ala Val Pro
 110 180 185
 113 <210> SEQ ID NO: 3
 114 <211> LENGTH: 861
 115 <212> TYPE: DNA
 116 <213> ORGANISM: Aequorea victoria
 118 <400> SEQUENCE: 3
 119 aatgcaattc atctttgcat caaagaattha catcaaatct ctagttgatc aactaaattg 60
 121 tctcgacaac aacaagcaaa catgacaagc aaacaatact cagtcaagct tacatcagac 120
 123 ttcgacaacc caagatggat tggacgacac aagcatatgt tcaatttcct ttagtgcac 180
 125 cacaatggaa aaatctctct tgacgagatg gtctacaagg catctgatata tgcataat 240
 127 aaccttggag caacacctga gcaagccaaa cgacacaaag atgctgtaga agccttcttc 300
 129 ggaggagctg gaatgaaata tggtgtggaa actgattggc ctgcataatata tgaaggatgg 360
 131 aaaaaattgg ctactgtga attggagaaa tacgcacaaa acgaaccaac gctcatccgt 420
 133 atatggggtg atgctttgtt tgatatcggtt gacaaagatc aaaaatggagc cattacactg 480
 135 gatgaatgaa aagcatacac caaagctgct ggtatcatcc aatcatcaga agatagcgg 540
 137 gaaacattca gagtgagcga tattgtgaa agtggacaac tcgatgtga tgagatgaca 600
 139 agacaacatt taggattttg gtacaccatg gatcctgcta gcggaaagct ctacgggtgg 660
 141 gctgtccct aagaagctct acgggtggta tgcaccctgg gaagatgatg tgatattgaa 720
 143 taaaacactg atgaattcaa tcaaaatttt ccaaaattttt gaacgatttc aatcgttgt 780
 145 gttgattttt gtaatttagga acagattaaa tcgaatgatt agttgtttt ttaatcaaca 840
 147 gaacttacaa atcgaaaaag t 861
 150 <210> SEQ ID NO: 4
 151 <211> LENGTH: 189
 152 <212> TYPE: PRT
 153 <213> ORGANISM: Aequorea victoria
 155 <400> SEQUENCE: 4
 157 Val Lys Leu Thr Ser Asp Phe Asp Asn Pro Arg Trp Ile Gly Arg His
 158 1 5 10 15
 161 Lys His Met Phe Asn Phe Leu Asp Val Asn His Asn Gly Lys Ile Ser
 162 20 25 30
 165 Leu Asp Glu Met Val Tyr Lys Ala Ser Asp Ile Val Ile Asn Asn Leu
 166 35 40 45

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169 Gly Ala Thr Pro Glu Gln Ala Lys Arg His Lys Asp Ala Val Glu Ala
 170 50 55 60
 173 Phe Phe Gly Gly Ala Gly Met Lys Tyr Gly Val Glu Thr Asp Trp Pro
 174 65 70 75 80
 177 Ala Tyr Ile Glu Gly Trp Lys Lys Leu Ala Thr Asp Glu Leu Glu Lys
 178 85 90 95
 181 Tyr Ala Lys Asn Glu Pro Thr Leu Ile Arg Ile Trp Gly Asp Ala Leu
 182 100 105 110
 185 Phe Asp Ile Val Asp Lys Asp Gln Asn Gly Ala Ile Thr Leu Asp Glu
 186 115 120 125
 189 Trp Lys Ala Tyr Thr Lys Ala Ala Gly Ile Ile Gln Ser Ser Glu Asp
 190 130 135 140
 193 Ser Glu Glu Thr Phe Arg Val Ser Asp Ile Asp Glu Ser Gly Gln Leu
 194 145 150 155 160
 197 Asp Val Asp Glu Met Thr Arg Gln His Leu Gly Phe Trp Tyr Thr Met
 198 165 170 175
 201 Asp Pro Ala Ser Glu Lys Leu Tyr Gly Gly Ala Val Pro
 202 180 185
 205 <210> SEQ ID NO: 5
 206 <211> LENGTH: 662
 207 <212> TYPE: DNA
 208 <213> ORGANISM: *Obelia longissima*
 210 <400> SEQUENCE: 5
 211 acgatcgaac caaacaactc agctcacagc tactgaacaa ctcttgggt gtacaatcaa 60
 213 aatgtcttca aaatacgcag ttaaaactcaa gactgacttt gataatccac gatggatcaa 120
 215 aagacacaag cacatgtttg atttcctcga catcaatgga aatggaaaaa tcaccctcga 180
 217 taaaatttgtc tccaaaggcat ctgatgacat atgtgccaag ctcgaagcca caccagaaca 240
 219 aacaaaacgc catcaagttt gtgttgaagc tttctttaga ggatgtggaa tggaatatgg 300
 221 taaagaaaatt gccttcccac aattcctcga tggatggaaa caattggcga cttcagaact 360
 223 caagaaaatgg gcaagaaacg aacctactct cattcgtgaa tggggagatg ctgtcttga 420
 225 tattttcgac aaagatggaa gtggtacaat cactttggac gaatggaaag cttatggaaa 480
 227 aatctctgtt atctctccat cacaagaaga ttgtgaagcg acatttcgac attgcgattt 540
 229 ggacaacagt ggtgacctt atgttgcgca gatgacaaga caacatctt gattctggta 600
 231 cactttggac ccagaagctg atggctctta tggcaacgga gttccctaag cttttttcg 660
 233 aa 662
 236 <210> SEQ ID NO: 6
 237 <211> LENGTH: 195
 238 <212> TYPE: PRT
 239 <213> ORGANISM: *Obelia longissima*
 241 <400> SEQUENCE: 6
 243 Met Ser Ser Lys Tyr Ala Val Lys Leu Lys Thr Asp Phe Asp Asn Pro
 244 1 5 10 15
 247 Arg Trp Ile Lys Arg His Lys His Met Phe Asp Phe Leu Asp Ile Asn
 248 20 25 30
 251 Gly Asn Gly Lys Ile Thr Leu Asp Glu Ile Val Ser Lys Ala Ser Asp
 252 35 40 45
 255 Asp Ile Cys Ala Lys Leu Glu Ala Thr Pro Glu Gln Thr Lys Arg His
 256 50 55 60
 259 Gln Val Cys Val Glu Ala Phe Phe Arg Gly Cys Gly Met Glu Tyr Gly

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260	65	70	75	80													
263	Lys	Glu	Ile	Ala	Phe	Pro	Gln	Phe	Leu	Asp	Gly	Trp	Lys	Gln	Leu	Ala	
264					85				90					95			
267	Thr	Ser	Glu	Leu	Lys	Lys	Trp	Ala	Arg	Asn	Glu	Pro	Thr	Leu	Ile	Arg	
268						100			105					110			
271	Glu	Trp	Gly	Asp	Ala	Val	Phe	Asp	Ile	Phe	Asp	Lys	Asp	Gly	Ser	Gly	
272						115			120					125			
275	Thr	Ile	Thr	Leu	Asp	Glu	Trp	Lys	Ala	Tyr	Gly	Lys	Ile	Ser	Gly	Ile	
276						130			135					140			
279	Ser	Pro	Ser	Gln	Glu	Asp	Cys	Glu	Ala	Thr	Phe	Arg	His	Cys	Asp	Leu	
280						145			150					155			160
283	Asp	Asn	Ser	Gly	Asp	Leu	Asp	Val	Asp	Glu	Met	Thr	Arg	Gln	His	Leu	
284							165			170				175			
287	Gly	Phe	Trp	Tyr	Thr	Leu	Asp	Pro	Glu	Ala	Asp	Gly	Leu	Tyr	Gly	Asn	
288							180			185				190			
291	Gly	Val	Pro														
292						195											

VERIFICATION SUMMARY

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